

IN THE UNITED STATES PATENT AND TRADE MARK OFFICE

In re Application of Junji NAKANISHI et al.

Serial No. 10/084,182

Filed : February 28, 2002

Group Art Unit : 1752

Examiner : SIN, J. LEE

CHEMICAL AMPLIFYING TYPE POSITIVE RESIST
COMPOSITION

* * * * *

DECLARATION

I, Makoto AKITA, residing at 7-7-1213, Nishioji-cho,
Kusatsu-shi, Shiga, 525-0037, Japan, declare and say:

that I was graduated from Master Course of Graduate School of
Division of Chemistry and Materials Technology, Kyoto Institute of
Technology in March 1992;

that since April 1992 to the present, I have been employed by
Sumitomo Chemical Co., Ltd., assignee of the above-identified
application, and from April 1984 to the present, I have been engaged
in research and development in the field of evaluation of photoresist
compositions; and

that in order to show the unexpected results obtained by Examples in
the present specification, I beg to submit the following experimental data which

had been obtained at the time the experiments were done:

Experimental Data

In order to clearly prove that the comparison between Examples and Comparative Examples does show unexpectedly superior results of the present invention, we submit pictures showing patterns by the scanning electron microscope of Examples 3, 4 and Comparative Example 1. Attached herewith is Sheet 1 showing pictures of patterns in Examples 3, 4 and Comparative Example 1 observed by the scanning electron microscope with each of 0.12 μm , 0.13 μm , 0.14 μm , 0.15 μm , 0.16 μm , 0.18 μm and 0.20 μm line and space mask at the specified exposure amount. Please see the attached Sheet 1.

In Comparative Example 1, no resolved pattern was obtained with 0.12 μm line and space mask, though patterns were resolved with 0.13 μm line and space mask.

On the other hand, clearly resolved patterns were obtained in Examples 3 and 4 with both 0.12 and 0.13 μm line and space masks.

As clearly seen from the attached sheet, unexpected result of the Examples 3 and 4 compared with Comparative Example 1 in the present specification was proven.

I declare further that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the

United State Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Signed this 10th day of April 2007.

Makoto AKITA
Makoto AKITA

Sheet 1	Exp. No.	Example 3	
	Exposure Amount	41mJ/cm2	
	Resolution		
	0.20um		
	0.18um		
	0.16um		
	0.15um		
	0.14um		
	0.13um		
	0.12um		
Width of line and space			mm
Comparative Example 1			38mJ/cm2
Example 4			40mJ/cm2